

Claims

1. Arrangement of at least one heat-insulation layer (3) on a carrier body (2) for preventing heat transfer between the carrier body (2) and a surrounding area (7) of the carrier body (2), where

- the heat-insulation layer (3) displays at least one luminescent substance which can be excited with the aid of excitation light having a specific excitation wavelength to emit a luminescent light having a specific luminescence wavelength, and where
- at least one further heat-insulation layer (5) is present which is essentially free of the luminescent substance, **characterized in that**
- the further heat-insulation layer (5) is essentially opaque with respect to the excitation light for exciting the emission of luminescent light and/or with respect to the luminescent light of the luminescent substance.

2. Arrangement according to claim 1, where the heat-insulation layer (3) is arranged between the carrier body (2) and the further heat-insulation layer (5) in such a way that the luminescent light of the luminescent substance can essentially only reach the surrounding area (7) of the carrier body (2) through apertures (6) in the further heat-insulation layer (5).

3. Arrangement according to claim 1 or 2, where the luminescent substance displays at least one metal oxide with at least one trivalent metal A.

4. Arrangement according to one of claims 1 to 3, where the luminescent substance displays an activator selected from the

cerium and/or europium and/or dysprosium and/or terbium group for exciting the emission of the luminescent light.

5. Arrangement according to one of claims 4, where the activator is contained in the luminescent substance in a proportion of up to 10 mol%.

6. Arrangement according to one of claims 3 to 5, where the metal oxide comprises a mixed oxide selected from the perovskite group with the empirical formula $AA'O_3$ and/or pyrochlore group with the empirical formula $A_2B_2O_7$, where A' comprises a trivalent metal and B comprises a tetravalent metal.

7. Arrangement according to one of claims 6, where the trivalent metal A and/or the trivalent metal A' comprises a rare earth element Re.

8. Arrangement according to claim 7, where the trivalent metal A and/or the trivalent metal A' comprises a rare earth element selected from the lanthanum and/or gadolinium and/or samarium group.

9. Arrangement according to one of claims 6 to 8, where the perovskite comprises a rare earth aluminate.

10. Arrangement according to claim 9, where the empirical formula of the rare earth aluminate comprises $Gd_{0,25}La_{0,75}AlO_3$.

11. Arrangement according to one of claims 6 to 10, where the pyrochlore is selected from the rare earth hafnate and/or rare earth titanate and/or rare earth zirconate group.

12. Arrangement according to claim 11, where the rare earth zirconate is selected from the gadolinium zirconate and/or samarium zirconate group.

13. Arrangement according to claim 11, where the rare earth hafnate comprises lanthanum hafnate.

14. Arrangement according to one of claims 1 to 13, where the carrier body comprises a component of an internal combustion engine.

15. Arrangement according to claim 14, where the internal combustion engine comprises a gas turbine.